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that passes; that which does not pass is fine sand, or No. 2. Mix these two kinds of sand in the proportion of five of No. 1, to two of No. 2, and of this sand so mixed, take four parts; heat it well, either in a brick furnace or on an iron plate or boiler as above, stirring it very briskly all the while, so as to mix and incorporate the ingredients thoroughly, and prevent the sand from sinking to the bottom. The composition being thus prepared is to be carried immediately to the place where it is to be laid on, in small light kettles, and spread even with trowels (like plasterers) made hot also, that it may not cool before the surface is made perfectly smooth: less nicety is required, when the whole is covered with earth.

The composition is to be laid on a flooring of rough boards, of three inches wide and three quarters of an inch thick, nailed as close as possible to the joists, hot, and about a quarter of an inch thick; and when cold, cover with another coat of the same thickness. A fall of one inch in ten feet is sufficient for these roofs. Over arches lay the composition rather thicker on a pavement of common tiles, made as flat as possible.

N. B. One barrel of tar and 45 stone of chalk, or whitening, will do thirty nine yards. The grate at Minto for heating the irons, or trowels, is twenty inches square by six inches deep, the peel twelve inches longer. A piece of strong sheet iron, four feet long, with the edges turned up about four inches, will do for drying the sand. Iron pots, about twenty Scotch pints, are of a convenient size; four of these built in, and used in succession, will keep two men employed in spreading the composition.

Observation. The description of the instrument used for spreading the composition must be erroneous, as one so thin as a plasterer's trowel would retain heat too short a time to be of any use. Spreading the composition on boards does not appear to be of a good practice, as boards are so liable to shrink and expand, from the variations of the damp and dryness of the air, that the composition laid on them must be always full of cracks, caused by this circumstance. In many other respects as well as the above, the directions given before in this Magazine for this kind of roof (particularly those communicated by Mr. Bevans) are preferable to those of Mr. Graham; which are only inserted here, that the readers of this work may have a better opportunity of comparing them with those before given.

Description of a Machine for washing potatoes, and other esculent roots, invented by Mr. William Lester of Paddington. From Soc. Arts.

This machine consists of a barrel, or hollow cylindrical vessel, formed of two circular boards, with a number of staves connecting them, six of which are fastened at the ends to two pieces of wood so as to form a door, which is opened to put in or take out the potatoes. This cylinder has an axis passing through its centre, which is turned by a winch, and which has a small wheel or pulley put on each of its extremities, to admit of the cylinder being passed forwards and backwards along a frame, which turns on pivots, between two vessels, in such a manner that when one end of it is depressed, the cylinder rolls down over one of them, and when the other end is lowered, it passes back over the other; one of these vessels contains water, into which the cylinder is lowered by depressing the end of the frame next to it, and the potatoes are then washed by turning it round in the water; and when this operation is completed, the cylinder is made to come over the other vessel, into which the washed potatoes are deposited, by undrawing the bolts, which keep the door of the cylinder shut. The cylinder is again filled with potatoes, and the operation repeated until the whole quantity is washed. One end of the frame extends much farther from the points on which it turns, than the other end, in order to serve as a lever for raising up the weight of the cylinder; the short end terminates in iron hooks, turning upwards and backwards towards the pivots, to prevent the cylinder from falling off; stops are also placed at this end, to prevent the other end from descending lower than might be convenient. The silver medal was voted to Mr. Lester for this invention by the society for the encouragement of Arts.

Observation. ..The machine of this kind which is placed in the repository of the society, has every appearance of being very well calculated for the purpose intended, both in its original design, and in the manner in which this is put into execution; which is done with that attention to strength, and durability, that is so desirable for implements, which must be submitted to the rough usage of labourers; there can be little doubt but that it would be found extremely serviceable, wherever large quantities of potatoes or other roots were to be washed; and would be particularly useful in places where cattle are fed with these kinds of vegetables

An Account of the Method of manufacturing Salt at Moutiers, in the department of Mont Blanc. By M. Berthier, Mine Engineer.

Continued from p. 299, No. XXVII.

In respect to the evaporation, it is necessary that the greatest possible proportion of water should be got rid of, relatively to the quantity of wood that is consumed; and the boilers are very far from being arranged in such a manner as to obtain this maximum of evaporation. They are very faulty, which is now perceived, and which it is intended to correct.

1°. The boilers are placed separate, and each of them has a very large fire-place. From this disposition, a great proportion of the heat that is developed is taken up to heat the masonry, and another portion is entirely lost, being taken off by the combustible vapours which the burning wood yields in large quantity, and which go off up the chimney in a very thick black smoke.

2°. The fire-place has a grate; all the small coals which are produced from the wood falls into the ash pit, and is consumed without yielding any benefit.

3°. So far from favouring the evaporation by a current of dry air sweeping all the surface of the liquid, all manner of circulation is rendered impossible from the enormous beams that almost touch it. The boiler is therefore as it were half shut up with a cover which stops the steam, condenses it, and opposes an obstacle to the evaporation.

4°. The great number of iron bars which rise up from the bottom of the boilers, to be fastened to the beams, are a very great hindrance to the work. The workmen who take away the schelot and the salt, cannot help leaving lumps in those corners where the peels cannot come. These lumps retain the heat, the salt calcines, and sticks to the bottom: this being unequally dilated, bends, splits, and lets the brine run out. The sediment continually increases, and from hence arises that thick crust of scales which must be knocked off the boiler at the expiration of a certain number of boilings.

In order to evaporate 30 or 40 met. cub. of brine, or 3600 or 4000 myriagrammes (scores) 50, 60, or even 70 steres of wood are consumed. The consumption of this fuel was formerly much less, because they used scarcely any thing but coals for the collection of the salt. It is not conceivable how a practice so very advantageous was left off. It must very soon be again taken up from necessity; but this will not happen till all the fine forests which the Tarentaise formerly possessed are entirely consumed, and the country, in other respects very poor, is reduced to the utmost distress.

The use of coals is dictated by the most urgent necessity. The salt works only possess wood enough for seven or eight years; if they are continued on the present establishment, there will remain at the end of that period no wood to mix with the coals, and a stop must be put to the works.

Nevertheless, there are numerous beds of coals in the neighbourhood of the establishment; and all the trials that have been made with this fuel have had very satisfactory results.

The coal found in the Tarentaise is dry, not bituminous; it incinerates with difficulty, burns with a very slight flame, does not cake together, and produces a very considerable heat. It is necessary to mix it with one-tenth part of wood in order to